IL 71 RESISTORS' EXHIBIT 3.11

BIOLOGICAL ASSESSMENT

AMEREN CORPORATION
PROPOSED 138KV TRANSMISSION LINE
NORTH LASALLE – WEDRON – OTTAWA
LASALLE COUNTY, ILLINOIS

January 4, 2007

NRC

Natural Resources Consulting, Inc.

NRC PROJECT # 06-053

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LaSalle County, Illinois

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Township 33N; Range 2E, Sections 1, 2, 3, 4, 5, 6
Township 33N; Range 3E, Sections 5, 6
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Township 34N; Range 3E, Sections 13, 14, 23, 24, 26, 31, 32, 33, 34, 35
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Township 34N; Range 4E, Sections 10, 15, 22, 27, 28, 32, 33

USGS Quadrangles: Wedron, Il; Ottawa, IL; Starved Rock, Il; LaSalle, IL

PRIMARY CONTACT

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INTRODUCTION

The purpose of this biological assessment is to review the proposed North LaSalle – Wedron – Ottawa 138kv Transmission Line in sufficient detail to determine to what extent the proposed action may affect any of the federally threatened, endangered, proposed, or sensitive species listed below. This biological assessment is prepared in accordance with legal requirements set forth under Section 7 of the Endangered Species Act (16 U.S.C. 1536 (c)).

Threatened, Endangered, Proposed Threatened or Proposed Endangered Species

- **Indiana Bat** (*Myotis sodalis*) – Endangered
- **Bald Eagle** (*Haliaeetus leucocephalus*) – Threatened
- **Decurrent False Aster** (*Boltonia decurrens*) – Threatened
- **Eastern Prairie Fringed Orchid** (*Platanthera leucophaea*) – Threatened
- **Prairie Bush Clover** (*Lespedeza leptostachya*) – Threatened

Candidate Species, Sensitive Species and Species of Concern

- **Sheepnose Mussel** (*Plethobasus cyphyus*) – Candidate Species

Critical Habitat

Critical habitat has not been designated for the bald eagle, decurrent false aster, eastern prairie fringed orchid, prairie bush clover or sheepnose mussel in the area of the proposed action; therefore, none will be affected.

Critical habitat, consisting of 11 caves and two mines, including Blackball Mine in LaSalle County, Illinois has been designated for the Indiana bat (*Myotis sodalis*). Final ruling for critical habitat for the Indiana bat was published on September 24, 1976 (41 FR 41914). The project area does not occur within nor will directly affect designated Indiana bat critical habitat, therefore none will be affected.

Consultation to Date

March 21, 2006: A conference call was held to discuss Clean Water Act Section 404 permitting for the proposed project. Present on the call were representatives with the U.S. Army Corps of Engineers (USACE), Realtime Utility Engineers, Ameren Corporation, and Natural Resources Consulting, Inc (NRC). Jeff Sniadach (USACE project manager) indicated that USACE authorization would be required for the Fox River crossing, any structures placed in wetlands/waterways, and permanent conversion of forested wetland to another wetland type if clearing is conducted with bulldozers or other mechanical equipment. Mr. Sniadach also recommended that Ameren begin consultation with the U.S. Fish and Wildlife Service (USFWS) to address threatened and endangered species, particularly the Indiana bat, since the USFWS is required to review the project as part of the Section 404 permitting process and determine if any impacts to federally listed species will occur as a result of the proposed project.

May 9, 2006: IDNR and the Nature Preserve Commission hosted a meeting at the Springfield office with NRC and Ameren representatives to discuss the project and address specific IDNR concerns. The group

discussed the various alternative routes and nearby resources of interest or concern. Some of the areas discussed included: May's Woods, Mitchell's Grove, Ottawa mill tailings and radiation sites, several contaminated sites, crossing over the Vermillion and Fox Rivers, Indiana bat habitat, and the I & M Canal at Ottawa. IDNR indicated that they would provide NRC with their natural heritage inventory database to overlay on the project plan maps (Attachment 1 – Figure 2).

June 1, 2006: NRC contacted Kristen Lundh (USFWS Rock Island Field Office) via telephone to initiate the informal consultation process and introduce the proposed project. Ms. Lundh indicated that the two most likely issues that will need to be addressed in the consultation process are impacts to bald eagles and the Indiana bat. In addition, she indicated that any potential Indiana bat habitat will require on-the-ground habitat assessments. If suitable habitat is identified, the Indiana bat is assumed to be present. Ms. Lundh indicated that a biological assessment would need to be completed by Ameren to address impacts to these species. NRC indicated that route maps would be submitted for USFWS review. NRC indicated that they have obtained the IDNR database for state and federally listed species locations within the project area. NRC inquired whether the USFWS has a similar database that should be referenced. Ms. Lundh indicated that the IDNR database likely contains the most current and accurate information. USFWS could provide a list of federally listed species that may occur within close proximity to the project area.

June 12, 2006: NRC received an email from Rick Pietruszka summarizing the IDNR staff comments on the routes. The major concern with the primary route was the crossing of the Little Vermillion River south of I-80 near LaSalle. IDNR was concerned about crossing the widest part of the forested corridor because of the impacts of forest fragmentation. IDNR indicated that this route was preferable over the alternative route that skirted adjacent to Mitchell's Grove Nature Preserve.

June 21, 2006: NRC submitted a preliminary Indiana Bat Habitat Assessment report to the USFWS. The report included mapping information that identified all potential Indiana bat habitat areas and the methodology that would be implemented for on-the-ground assessments. The USFWS concurred with this approach.

July 26, 2006: NRC contacted Kristen Lundh (USFWS Rock Island Field Office) via telephone to determine if mist net surveys would need to be conducted in suitable habitat areas. She indicated that they are not required; however, if suitable habitat is going to be impacted, she strongly recommends that surveys be conducted in those areas. She also indicated that there may be severe limitations on the amount of tree clearing that can be conducted within close proximity to the Blackball Mine hibernaculum since this is critical habitat. She also indicated that the Rock Island Field Office has not previously had a project of this magnitude this close to critical habitat and she needed to obtain further guidance on the issue.

July 27, 2006: Kristen Lundh (USFWS Rock Island Field Office) contacted NRC via telephone. She indicated that the USFWS had determined that there is a 5-mile buffer around Blackball Mine and that the presence of the buffer would have serious implications on all of the proposed southern routes that impact suitable habitat. Ms. Lundh indicated that the USFWS has concerns related to impacts to swarming habitat and that the USFWS may like to see mist net surveys conducted during the swarming period. In addition, the USFWS strongly suggests that impacts to suitable habitat within the 5-mile buffer be completely avoided. Ms. Lundh indicated that the USFWS could not provide comments on the different southern route alternatives without a substantial amount of documentation on the habitat quality based on field assessments.

August 1, 2006: NRC contacted Joe Kath, Illinois Department of Natural Resources (IDNR) endangered species project manger, via telephone to discuss what information is available on the occurrence of the Indiana bat in LaSalle County. Based on a verbal description of the proposed project and habitat types

from NRC, Mr. Kath did not believe the proposed project would impact the Indiana bat. Mr. Kath was more concerned about crossing over the Little Vermillion River through a large forested area causing forest fragmentation.

August 21, 2006: A meeting was held at the Ameren Corporation office in Peoria, Illinois to discuss potential impacts to Indiana bats resulting from the proposed transmission line. In attendance, were representatives from Ameren Corporation, the USFWS, IDNR, and NRC.

Ameren staff presented an overview of the need for the proposed transmission loop and alternative alignments under consideration. NRC staff presented the results to date of Indiana bat habitat surveys along the proposed alignments. Joe Kath, IDNR endangered species project manger, presented what is known of Indiana bat usage at Blackball Mine in the vicinity of the project and in LaSalle County overall. Discussion was held concerning the need for mist net surveys within the right-of-way (ROW) of the project. Joe Kath felt mist net surveys would not be useful given the ROW limitations and what is already known regarding Indiana bat usage in LaSalle County. USFWS staff suggested that mist netting may be needed if tree clearing is proposed in highly suitable habitat patches. Both agencies agreed that netting during the swarming period was not necessary since the bats have been documented to swarm only at the cave entrance during this period.

USFWS staff indicated that there is potential for an effect on the Indiana bat due to the proximity of the project to Blackball Mine and the presence of suitable summer habitat in the project area. Based on this, the USFWS requested that a biological assessment be prepared to determine if the project will have an effect on the Indiana bat and/or other federally listed species in the project area.

AGENCY MANAGEMENT GUIDANCE

Indiana Bat

The Indiana bat was listed as endangered by the USFWS on March 11, 1967 (32 FR 4001). A USFWS Indiana Bat Recovery Plan was first developed and signed on October 14, 1983 (USFWS, 1983a) and has gone through several revisions. The most recent version of the plan is the agency draft "Indiana Bat (*Myotis sodalis*) Revised Recovery Plan" (USFWS, 1999a).

The Indiana bat is also currently listed as endangered by the State of Illinois. State listed species are protected under the Illinois Endangered Species Protection Act and regulatory authority under State law lies with the IDNR.

The agency draft revised recovery plan describes four main goals that indicate the USFWS's current management direction (USFWS, 1999a):

1. Updating the recovery plan with new information on the life history and ecology of the Indiana bat, particularly on its summer ecology.
2. Highlighting the continued and accelerated decline of the species.
3. Continuing site protection and monitoring efforts at hibernacula.
4. Focusing new recovery efforts towards research to determine the factor and/or factors causing population declines.

Bald Eagle

The bald eagle was listed as endangered by the USFWS in the lower 48 states, with the exception of Washington, Oregon, Minnesota, Wisconsin and Michigan where it was listed as threatened, on March 11, 1967 (32 FR 4001). On July 12, 1995, in response to increasing population numbers, the USFWS reclassified the bald eagle as threatened in the lower 48 states (60 FR 35999-36010). On July 6, 1999, the USFWS proposed to remove the bald eagle from the list of endangered and threatened wildlife in the lower 48 states indicating that the species had recovered due to habitat protection and management actions initiated under the Endangered Species Act (64 FR 36453-36464). On February 16, 2006, the USFWS reopened the public comment period for the reclassification of the bald eagle (71 FR 8238-8251) and on May 16, 2006 the USFWS extended the public comment period (71 FR 28293). At present, the bald eagle remains classified as threatened in the lower 48 states.

The bald eagle is also currently listed as threatened by the State of Illinois. State listed species are protected under the Illinois Endangered Species Protection Act and regulatory authority under State law lies with the IDNR.

A number of recovery plans for the bald eagle have been developed for various regions of the United States. The Northern States Bald Eagle Recovery Plan covers 24 states including Illinois (USFWS, 1983b). The primary recovery objective stated in the plan is to reestablish self-sustaining populations of bald eagles throughout the Northern States Region, with an initial goal of 1,200 occupied breeding areas distributed over a minimum of 16 states by the year 2000, with average annual productivity of at least one young per occupied nest. Specific recovery tasks described in the plan fall into four general categories (USFWS, 1983b):

1. Determine current population and habitat status.
2. Determine minimum population and habitat needed to achieve recovery.
3. Protect, enhance, and increase bald eagle populations and habitats.

4. Establish and implement a coordination system for information and communication.

On February 16, 2006, the USFWS announced the availability of Draft National Bald Eagle Management Guidelines (71 FR 8309). The guidelines are intended to provide guidance and information to land mangers, landowners and others on how to avoid disturbing bald eagles in the event the bald eagle is delisted (USFWS, 2006). The guidelines are intended to:

1. Publicize the provisions of the Bald and Golden Eagle Protection Act that continue to protect bald eagles, in order to reduce the possibility that people will violate the law.
2. Advise landowners, land managers and the general public of the potential for various human activities to disturb bald eagles.
3. Encourage land management practices that benefit bald eagles and their habitat.

Decurrent False Aster

The decurrent false aster was listed as threatened by the USFWS on November 14, 1988 (53 FR 45858-45861). A USFWS Decurrent False Aster Recovery Plan was developed and signed on September 28, 1990 (USFWS, 1990). In March 2006, the USFWS initiated a 5-year review of the status of the decurrent false aster to determine if the species is properly classified (71 FR 16176-16177).

The decurrent false aster is also currently listed as threatened by the State of Illinois. State listed species are protected under the Illinois Endangered Species Protection Act and regulatory authority under State law lies with the IDNR.

The recovery plan lists six actions that are needed for the recovery of the species, which indicate the USFWS's current management direction (USFWS, 1990):

1. Survey suitable habitat for additional populations.
2. Protect existing and established populations.
3. Establish new populations.
4. Conduct research on the biology of the species.
5. Monitor natural and established populations.
6. Develop and maintain public support.

Eastern Prairie Fringed Orchid

The Eastern prairie fringed orchid was listed as threatened by the USFWS on September 28, 1989 (54 FR 39857-39863). A USFWS Eastern Prairie Fringed Orchid Recovery Plan was developed and signed on September 29, 1999 (USFWS, 1999b).

The Eastern prairie fringed orchid is also currently listed as endangered by the State of Illinois. State listed species are protected under the Illinois Endangered Species Protection Act and regulatory authority under State law lies with the IDNR.

The recovery plan lists seven actions that are needed for the recovery of the species, which indicate the USFWS's current management direction (USFWS, 1999b):

1. Protect habitat.
2. Manage habitat to support stable or increasing populations of the orchid.
3. Increase the size and number of existing populations.

4. Monitor the status of known populations.
5. Conduct research needed to identify recovery actions.
6. Update population ranks and identify populations to be restored to higher levels of viability.
7. Track the progress toward recovery.

Prairie Bush Clover

The prairie bush clover was listed as threatened by the USFWS on January 9, 1987 (52 FR 781-785). A USFWS Prairie Bush Clover Recovery Plan was developed and signed on October 6, 1988 (USFWS, 1988).

Prairie bush clover is also currently listed as endangered by the State of Illinois. State listed species are protected under the Illinois Endangered Species Protection Act and regulatory authority under State law lies with the IDNR.

The recovery plan lists seven actions that are needed for the recovery of the species, which indicate the USFWS's current management direction (USFWS, 1988):

1. Protect selected viable populations and their habitat.
2. Provide appropriate management at each protected site.
3. Inventory to locate additional populations.
4. Monitor population trends at known sites.
5. Establish artificial seed banks for selected populations.
6. Provide appropriate public information.
7. Conduct appropriate Research.

Sheepnose Mussel

The sheepnose mussel was listed as a federal candidate species by the USFWS on May 4, 2004 (69 FR 24876-24904). A status assessment of the species was completed in 2002 (Butler, 2002).

The sheepnose mussel is also currently listed as endangered by the State of Illinois. State listed species are protected under the Illinois Endangered Species Protection Act and regulatory authority under State law lies with the IDNR.

The status assessment lists 12 management actions needed to conserve the species, which indicate the USFWS's current management direction (Butler, 2002):

1. Implement existing laws and regulations.
2. Prioritize streams and watersheds for protection.
3. Involve local communities for the conservation and restoration of imperiled mussel populations.
4. Seek funding from various sources for the recovery of the sheepnose.
5. Implement best management practices on riparian lands to reduce stream sedimentation and runoff of chemicals and nutrient.
6. Initiate more habitat restoration programs.
7. Adjust numerical criteria for pollutants.
8. Monitor populations and habitat conditions.
9. Reduce impacts of mining.
10. Increase public outreach and education.

11. Conduct stress analyses to determine the entire suite of stressors to the sheepnose and its habitat, to locate the sites of the various stressors, and to outline management activities to eliminate or at least minimize each stressor.
12. Establish a Geographic Information System.

DESCRIPTION OF THE PROPOSED ACTION

Project Purpose

AmerenIP proposes to construct approximately 30 to 35 miles of new 138 kV transmission line between both the North LaSalle Substation and the Ottawa Substation in the Company's LaSalle service area (Attachment 1 - Figure 1). The proposed line and substation facilities will facilitate meeting transmission and sub-transmission system reinforcement needs in the area. More specifically, these facilities are needed to improve voltages in the LaSalle area and minimize the risk of loss-of-load in the Ottawa, Marseilles, and Wedron areas during contingency conditions. Voltages in the area are projected to be below planning criteria by year 2006 during the outage of one of the existing 138 kV lines serving the area. In addition, the 138/34.5 kV, 93 MVA transformer at Ottawa and the 138/34.5 kV, 112 MVA transformer at Marseilles are loaded near capacity during contingency conditions. This project is in the public interest as the new facilities will provide improved voltages, capacity for future load growth and improved reliability of service to the Ottawa, Marseilles and Wedron areas.

Proposed Facility Type

The transmission lines will consist of a combination of single-shaft wood or steel pole construction and wood h-frame construction depending on the terrain and physical constraints of the selected route. If the 138 kV line is placed on common easement with 34.5 kV lines, the single-shaft pole tangent structures would be utilized. These single-shaft poles are estimated to range from 75 to 95 feet in height. The typical H-frame wood pole tangent structure that may be used for non-agricultural cross-country construction and the river crossing near Wedron are estimated to range from 55 to 85 feet in height. The typical right-of-way width will be 100 feet but may vary slightly in specific locations due to existing right-of-ways, existing structures/utilities, or other circumstances. These facilities and related construction are consistent with industry-wide standards.

Construction of the proposed transmission line is scheduled to begin in 2007.

Conservation Measures

Four alternatives routes for crossing the Little Vermillion River were considered (Attachment 1 – Figure 3). Two of the routes (P-A and P-B) would have crossed the Little Vermillion River and its associated tributaries through a wide section of floodplain and upland forest, resulting in 5.6 acres of woodland impact for the P-A route and 8.4 acres of woodland impact for the P-B route. In addition, both routes would have fragmented large blocks of forest. Furthermore, the P-A route would have been located adjacent to Mitchell's Grove Nature Preserve and was of concern to the IDNR. The P-B Route was originally the preferred route; however, in order to reduce the number of acres of woodland impacted, reduce forest fragmentation and minimize impacts to potential Indiana bat habitat, the P-C Route was developed.

After completion of the field surveys, it was determined that although the P-C Route would reduce overall woodland impacts, the route would pass through a section of high quality Indiana bat habitat associated with the Little Vermillion River. Therefore, in an effort to further reduce impacts to potential Indiana bat habitat, the route was shifted slightly northeast out of the high quality habitat. The current preferred route (NLW Primary Route) would cross the Little Vermillion River at the point where the riparian forest is the narrowest (140 feet) and most disturbed and at the point where potential Indiana bat habitat based on Illinois GAP Analysis data is the narrowest (Attachment 1 – Figure 7; IL-GAP, 2006), resulting in only 0.4 acre of forest impact (Attachment 1 - Figure 6 – pgs 1-5), thereby minimizing the impacts to potential Indiana bat habitat along the Little Vermillion River to the greatest extent possible.

In addition to selecting the alternative that avoids impacting high quality Indiana bat habitat and reduces forest fragmentation, impacts to the Indiana bat will also be minimized through construction timing. All tree clearing, including in those areas deemed to be low to moderate quality Indiana bat habitat, will occur during the winter, the time of year when the likelihood of Indiana bats being present in the action area is extremely low. In addition, during the summer months when bats may be present, construction activities such as pole construction and line stringing, shall be conducted during the daytime hours when the bats are typically inactive.

AmerenIP will mitigate those areas determined to be potentially suitable Indiana bat summer habitat using a combination of measures, including:

- Conducting all tree clearing activities between September 16 and April 14 to avoid direct impacts to Indiana bats.
- Carrying out all transmission line construction during the daytime hours in the summer months to avoid harassment of foraging bats.
- Installing erosion control measures to prevent erosion, siltation, and degradation of adjacent wildlife and habitat areas.

In the event that individuals of any of the species covered by this Biological Assessment are found within the action area, work at that location will immediately stop until further coordination with the USFWS has taken place.

Action Area

The action area for this project is defined as the project corridor (right-of-way boundary to opposite right-of-way boundary) and those areas adjacent to the proposed transmission line that may be affected indirectly.

SPECIES ACCOUNTS AND STATUS OF THE SPECIES IN THE ACTION AREA

Indiana Bat

Species Description

Indiana bats (*Myotis sodalis*) are medium-sized, grayish brown bats with a forearm length of 1.4-1.6 inches and a total length of 2.8-3.8 inches. The tragus is short and blunt and measures slightly less than half the height of the ear. The tail is approximately 80 percent of the length of the head and body. The skull has a small sagittal crest and a small, narrow braincase. Indiana bats may be distinguished from the similar little brown bat (*Myotis lucifugus*) and the northern long-eared bat (*Myotis septentrionalis*) by the presence of a keeled calcar and toe hairs that are shorter than the claws.

The USFWS listed Indiana bats as endangered due to a population decrease of 28 percent over the total range of the species from 1960 to 1975 (Thomson, 1982), and because over 85 percent of the Indiana bat population hibernates in just seven caves, three of which are in southern Missouri (LaVal and LaVal, 1980; Harvey, 1992). As of 2001, the estimated total population of Indiana bats, based upon a census of hibernacula, was approximately 380,000 bats, down from approximately 880,000 bats in 1960, representing a decline of approximately 57 percent (Clawson, 2002).

The distribution of Indiana bats is associated with the major cave regions of the Midwestern and eastern United States. The range extends from Oklahoma, Iowa and Wisconsin east to Vermont and south to northwestern Florida. The bats migrate seasonally between winter and summer roosts. Hibernation typically occurs from October through April.

Indiana bats feed exclusively on flying insects, with both terrestrial and aquatic insects being consumed. Diet varies seasonally and variation is seen between different ages, sexes and reproductive status groups (USFWS, 1999a). A number of studies conducted on the diet of Indiana bats have found the major prey groups to include moths (Lepidoptera), caddisflies (Trichoptera), flies, mosquitoes and midges (Diptera), bees, wasps, and flying ants (Hymenoptera), beetles (Coleoptera), stoneflies (Plecoptera), leafhoppers and treehoppers (Homoptera) and lacewings (Neuroptera) (USFWS, 1999a).

Habitat Requirements

Indiana bats require specific hibernacula conditions (i.e. stable temperature, humidity and air movement), and typically hibernate in large, dense clusters that range from 300 individuals per square foot (Clawson et al., 1980) up to 100,000 individuals per cluster. Studies have found that over 85 percent of the range-wide population of Indiana bats occupy just nine hibernacula (7 caves, 2 abandoned mines) during the winter; Kentucky, Missouri, and Indiana each contain three of these major hibernacula (USFWS, 1999a).

The summer habitat requirements of Indiana bats are not fully understood. Until recently, it was believed that floodplain and riparian forests were the preferred habitats for roosting and foraging (Humphrey et al., 1977); however, recent studies have shown that upland forests are also used by Indiana bats for roosting and that suitable foraging habitats may include upland forests, old fields (clearings with early successional vegetation), edges of croplands, wooded fencerows, and pastures with scattered trees and/or farm ponds (Clark et al., 1987; Gardner et al., 1991).

The presence of Indiana bats in a particular area during the summer appears to be determined largely by the availability of suitable, natural roost structures. The suitability of a particular tree as a roost site is determined by its condition (live or dead), the amount of exfoliating bark, the tree's exposure to solar radiation, its relative location to other trees, as well as a permanent water source and foraging areas (USFWS, 1999a).

Documented roost trees most frequently used in Illinois include northern red oak (*Quercus rubra*), slippery elm (*Ulmus rubra*), cottonwood (*Populus deltoides*), silver maple (*Acer saccharinum*), and shagbark hickory (*Carya ovata*), which typically have been located within 1,600 feet of a perennial or intermittent stream (Hoffman, 1996). However, the species of the roost tree appears to be less of a factor than the tree's structure (i.e. the availability of exfoliating bark with roost space underneath). Studies show that Indiana bats have strong fidelity to summer habitats. Females have been documented returning to the same roosts from one year to the next (Humphrey et al., 1977; Gardner et al., 1991; Callahan et al., 1997) and males have been recaptured when foraging in habitat occupied during previous summers (Gardner et al., 1991).

Reproduction and Maternity Roost Habitat Requirements

Indiana bats mate during the fall, just prior to hibernation. Male and female bats congregate near the opening of a cave (usually their hibernacula), and swarm, a behavior in which large numbers of bats fly in and out of cave entrances from dusk to dawn, while relatively few roost in the caves during the day (Cope and Humphrey, 1977). Swarming lasts over a period of several weeks with mating occurring during the latter part of that period. Once females have mated, they enter the hibernacula and begin hibernation, whereas males will remain active longer, likely attempting to mate with additional females as they arrive at the hibernacula. Adult females store sperm during the winter with fertilization delayed until soon after they emerge from hibernation.

Females leave the hibernacula ahead of the males, usually by the beginning of May, and migrate to their summer roost habitats where they form small maternity colonies (Whitaker and Hamilton, 1998). Maternity colonies generally have several separate roost areas located near one another that collectively provide the colony with the necessary roosting resources (including cover and correct temperature provided by exfoliating bark) needed during different environmental conditions. These colonies typically utilize one to a few primary roost trees (Callahan et al., 1997), which provide the proper roosting conditions most of the time, and are normally large, dead trees with exfoliating bark that are exposed to abundant sunlight (Miller et al., 2002; Whitaker and Brack, 2002).

The habitat in which the primary roosts have been found varies considerably; roost trees have been found in dense or open woods, strips of riparian forest, small patches of woods, as well as open land; however, the roosts are normally located in open areas subjected to prolonged sunlight (Whitaker and Brack, 2002; Miller et al., 2002). During extreme environmental conditions, such as rain, wind, or temperature extremes, the maternity colony may use alternate roost trees, which likely provide the bats with microclimate conditions that the primary roost trees cannot during times of sub-optimal environmental conditions. The locations of these alternate roosts vary from open areas or in the interior of forest stands. A study of bats in northern Missouri revealed that usage of dead trees in the forest interior increased significantly in response to unusually warm temperatures, and the usage of both interior live and dead trees increased during periods of precipitation (Miller et al., 2002). The primary roosts are typically inhabited by many females and young throughout the summer, whereas alternate roost trees receive only intermittent use by individuals or a small number of bats.

Species Status in the Action Area

There are no known records of Indiana bats within the action area. In LaSalle County, Indiana bats are only known from Blackball Mine and its vicinity (Gardner et al., 1996; USFWS, 1999a; Joe Kath, IDNR, pers. comm., 2006). Blackball Mine, designated as critical Indiana bat habitat (see above), is part of the Pecumsaugan Creek-Blackball Mines Nature Preserve located approximately 0.7 mile south of the action area at the closest point (Attachment 1 - Figure 4). Blackball Mine is one of the largest bat hibernacula in Illinois and is currently recognized as a Priority 2 hibernacula (recorded population >500 but < 30,000) by the USFWS (USFWS, 1999a).

The IDNR has conducted winter surveys of Blackball Mine every year for over 20 years and has consistently found between 1,000 and 1,600 Indiana bats hibernating in the mine (Joe Kath, IDNR, pers. comm., 2006), compared to 40,000 – 50,000 Indiana bats found in Priority 1 caves in Indiana and Missouri (USFWS, 1999a).

The USFWS has established a 5-mile buffer around Blackball Mine to protect fall swarming habitat (Kristen Lundh, USFWS, pers. comm., 2006) (Attachment 1 - Figure 4). IDNR fall surveys indicate that the bats do not utilize a five mile area around Blackball Mine during the swarming period; instead, the bats are restricted to the entrance of the mine (Joe Kath, IDNR, pers. comm., 2006). Habitat quality decreases substantially further away from the mine, especially to the north, and there is no reason for the bats to venture that far from the mine, as their primary interest during the swarming period is mating, not foraging (Joe Kath, IDNR, pers. comm., 2006).

No records of summer maternity colonies exist for LaSalle County (USFWS, 1999a; Joe Kath, IDNR, pers. comm., 2006). The only summer records of Indiana bats in LaSalle County are of three males using Blackball Mine (Gardner et al., 1996) and a male caught along Pecumsaugan Creek just north of US Hwy 6 in May 2006 (Joe Kath, IDNR, pers. comm., 2006). The only other Indiana bat records north of 41°N latitude are for three specimens collected at a mine in Jo Daviess County in December 1953 and a migratory individual in Cook County in September 1928 (Gardner et al., 1996).

No Indiana bats were caught by Gardner et al. (1996) during a mist net survey at locations along the Little Vermillion River in LaSalle County as part of a ten year study of the summer distribution of Indiana bats in Illinois. Furthermore, no Indiana bats were caught north of Henderson and Ford counties during this 10-year study or previous studies by Gardner and Taft (1983). Gardner et al (1996) concluded that it appears that the summer range of the Indiana bat does not extend into the northern quarter of Illinois.

Band recoveries from wintering Indiana bats banded at Blackball Mine show that the bats all left Illinois in the summer (USFWS, 1999a); however, sample size is small and must be viewed with some caution. Joe Kath (IDNR, pers. comm., 2006) believes that if summering Indiana bats are present in LaSalle County, they are most likely found south of Blackball Mine in the vicinity of Starved Rock State Park where fairly large, less fragmented forested habitat still remains.

Suitable summer habitat in Illinois is considered to have the following characteristics within a 0.5 mile radius of a project site (USFWS Rock Island Field Office guidance, 2006):

- Forest cover of 15 percent or greater
- Permanent water
- One or more of the following tree species: shagbark and shellbark hickory that may be dead or alive, and dead bitternut hickory, American elm, slippery elm, eastern cottonwood, silver maple, white oak, red oak, post oak, and shingle oak with slabs or plates of loose bark
- Potential roost trees with 10 percent or more peeling or loose bark

A survey for potential Indiana bat summer habitat within the action area was conducted by NRC biologists in August and September 2006. Walking surveys of all woodland tracts within the proposed ROW limits were conducted to assess their potential to provide appropriate roost trees for Indiana bats. A tract was defined as only that portion of a woodland located within the project ROW limits, even if the woodland extended outside of the project limits. Potential roost trees were considered to be live or dead trees of any size with greater than 10 percent exfoliating bark. Information collected about each tree included:

- Species (If Known)
- Percent Exfoliating Bark

- Condition (Alive or Dead)
- Presence of Hollow Cavities

In addition to the presence of potential roost trees, the general plant community was assessed in each woodland tract. Forest assessment data forms are available upon request.

In addition to the field surveys, recent aerial photographs of the project area were used to evaluate the *foraging habitat suitability around each tract. A 0.5-mile radius plot was drawn around each tract and the* suitability of the foraging habitat was based on the percent of forest cover and the presence of permanent water within each plot.

A total of 15 woodland tracts were surveyed within the project corridor. The locations of each of the tracts are shown in Attachment 1 - Figure 5 (pgs 1-6) and Figure 6 (pgs 1-5). A summary of suitable Indiana bat summer habitat criteria and individual tract characteristics is shown in Attachment 2 – Table 1. Thirteen tracts met the requirements for > 15 percent forest cover within 0.5 mile and all 15 tracts have permanent water within 0.5 mile. Ten tracts also contained suitable potential roost trees and are therefore considered to be suitable Indiana bat summer habitat (Attachment 1 - Figures 5 and 6).

The majority of the woodlands located in the action area are dominated by burr oak (*Quercus macrocarpa*), white oak (*Quercus alba*) and red oak (*Quercus rubra*) in the uplands, and cottonwood (*Populus deltoides*), silver maple (Acer saccharinum) and box elder (*Acer negundo*) in the floodplains. Shagbark hickory (*Carya ovata*) and black locust (*Robinia pseudoacacia*) dominate a few tracts. A summary of woodland tracts rated as suitable Indiana bat summer habitat is shown in Attachment 2 - Table 2.

An estimate of the quality of each tract rated as suitable Indiana bat summer habitat was made based on one or more of the following criteria:

- Low Quality
  - Highly disturbed
  - Located along a small intermittent stream
  - Isolated from other suitable habitat
  - Not indicated by Illinois GAP Analysis as potential habitat (IL-GAP, 2006)
  - Small number of low quality potential roost trees
- Moderate Quality
  - Moderate sized woodland
  - Located along Pecumsaugan Creek north of Blackball Mine
  - Indicated by Illinois GAP Analysis as potential habitat (IL-GAP, 2006)
  - Small to moderate number of moderate quality potential roost trees
- High Quality
  - Large sized woodland
  - Located along the Little Vermillion River
  - Indicated by Illinois GAP Analysis as potential habitat (IL-GAP, 2006)
  - Moderate to high number of high quality potential roost trees

Many of the tracts are degraded and show signs of disturbance, including past logging and grazing. The highest quality potential Indiana bat habitat is located along the Little Vermillion River to the north and south of the action area. Of the ten tracts within the action area rated as suitable Indiana bat summer habitat, zero are considered to be high quality, two (20 percent) are considered to be moderate quality and eight (80 percent) are considered to be low quality (Attachment 2 - Table 2; Attachment 1 - Figures 5 and 6). Representative photos of woodland tracts within the action area are shown in Appendix A.

Bald Eagle

Species Description

Bald eagles (*Haliaeetus leucocephalus*) are typically found associated with large, permanent water sources such as lakes, reservoirs or major rivers. Important habitat components for bald eagles include an adequate food supply (primarily fish, but also waterfowl and other waterbirds, small mammals and carrion), perching sites in large shoreline trees, and nesting sites in large, mature old-growth trees, dead trees, cliffs and rock promontories.

Egg laying dates vary across the United States. In Illinois, nest building takes place from December through March; egg-laying and incubation from February through April; hatching and rearing of young from February through August; and fledging of young from May through August (USFWS, 2006). Young birds remain in the vicinity of the nest for several weeks as they are completely dependent on their parents for food until they disperse.

During the winter, eagles feed on fish in the open water areas created by dam tailwaters, the warm water effluents of power plants, and municipal and industrial discharges, or in power plant cooling ponds. The concentration of eagles at these locations becomes greater the more severe the winter. They roost at night in groups in large trees adjacent to the river in areas that are protected from the harsh winter elements.

Species Status in the Action Area

The bald eagle is known to nest and winter in LaSalle County (Attachment 1 – Figure 2; IDNR, 2006). Habitat and community types were mapped along the entire project corridor. Suitable bald eagle habitat is largely absent within the action area. No bald eagle nests or night roosts were found during the habitat assessment for this project. In addition, no records of occurrence of bald eagles within or near the action area are found in the Natural Heritage Inventory database (Attachment 1 – Figure 2; IDNR, 2006). Suitable water resources are limited within the action area and consist mainly of the Fox River. Some large trees that could potentially be used as perching sites are found along the east bank of Fox River within the action area at approximately Mile 26.5; however, this type of habitat is fairly abundant along the Fox River throughout that area.

Decurrent False Aster

Species Description

The decurrent false aster (*Boltonia decurrens*) is a perennial herbaceous plant of the Asteraceae family. The species is endemic to the Illinois River valley from LaSalle, Illinois to the confluence with the Mississippi River, and the floodplain of the Mississippi River valley to St. Louis, Missouri. The species typically occurs within moist floodplain and wet prairie environments on silty or sandy loam alluvial soils that are exposed to periodic scour and disturbance from flooding. The species is tolerant of short duration flooding, but intolerant of prolonged flooding. The plant also responds negatively to competition for light and soil moisture resources from other early successional herbaceous species typically found in floodplain environments.

The decurrent false aster reproduces both sexually through seed dispersal and asexually through production of basal shoots. Reproductive plants typically grow to a height of 5 to 6.5 feet and the species is distinguished by conspicuously clasping (or decurrent) stem leaves. The species typically flowers from August to October across its range, with peak flowering during September.

Chief threats to the species include loss of suitable habitat from conversion of wetlands and meadows to other land uses, alteration of hydrologic regimes and natural flooding patterns for flood control and drainage projects, and excessive siltation caused by erosion of soils from agricultural and other developed

lands within the watersheds.

Species Status in the Action Area

Historically, the decurrent false aster was known to occur within the Illinois River floodplain in La Salle County (USFWS, 1990). Extensive surveys for the species in Illinois conducted in the 1980's failed to locate any extant populations in LaSalle, County (USFWS, 1990). No decurrent false aster specimens from LaSalle County are found in the Illinois Natural History Survey plant collection (http://www.inhs.uiuc.edu/cbd/collections/index.html).

The action area for the project under consideration in this biological assessment does not include the Illinois River floodplain, the known habitat of the decurrent false aster in LaSalle County. A crossing of the Fox River is included in the action area; however, no evidence of the species presence in the Fox River floodplain exists.

Eastern Prairie Frfnged Orchid

Species Description

The Eastern prairie fringed orchid (*Platanthera leucophaea*) is a perennial herbaceous plant of the Orchidaceae family. This grassland species, adapted to periodic fire and drought, occurs in a wide variety of habitats, from mesic prairie to wetland communities such as sedge meadows, marsh edges and even bogs (USFWS, 1999b). It requires full sunlight for optimum growth and flowering, which restricts it to grass- and sedge-dominated plant communities with more or less neutral to mildly calcareous soils (USFWS, 1999b). Populations are characterized by periods of mass flowering or dormancy.

The plant grows 8 to 40 inches tall and has an upright leafy stem with a flower cluster called an inflorescence. Lance-shaped leaves 3 to 8 inches long sheath the stem. Each plant has a single flower spike composed of 5 to 40 creamy white flowers. Each flower has a three-part fringed lip less than 1 inch long and a nectar spur approximately 1 to 2 inches long. The plant has a complex life history beginning as an underground tuber. Flowering takes place from late June to early July and lasts for 7 to 10 days. Flowers are pollinated by night flying hawkmoths.

Chief threats to the species include succession to woody vegetation, competition from non-native species, over collecting, and drainage and conversion of wetland habitats to farmland and pasture.

Species Status in the Action Area

Historically, the species occurred in 33 counties across the northern two-thirds of Illinois (USFWS, 1999b). Presently, the orchids are known from six counties concentrated in the Chicago region (USFWS, 1999b). No extant populations are known from LaSalle County (USFWS, 1999b). No eastern prairie fringed orchid specimens from LaSalle County are found in the Illinois Natural History Survey plant collection (http://www.inhs.uiuc.edu/cbd/collections/index.html).

No extensive surveys for this species were conducted as part of this project. However, habitat and community types were mapped along the entire project corridor. No areas with suitable habitat for the eastern prairie fringed orchid were found within the action area for this project.

Prairie Bush Clover

Species Description

Prairie bush clover (*Lespedeza leptostachya*) is a perennial herbaceous plant of the Fabacea family. The species is endemic to the tallgrass prairie region of the Upper Mississippi River Valley and is only found in the tallgrass prairie region of Iowa, Illinois, Minnesota and Wisconsin (USFWS, 1988).

The species is characterized by a clover-like leaf comprised of three leaflets about an inch long and a quarter inch wide. Flowering plants are generally 9 - 18 inches tall with the flowers loosely arranged on an open spike. The pale pink or cream colored flowers bloom in mid-July. The flowers are less often seen than the silvery-green pods because of the species' short blooming season and its ability to produce pods directly from flowers that never open. The entire plant has a grayish-silver sheen, making it easy to distinguish from its more round-leaved cultivated relative, the sweet clover (*Melilotus* sp.).

Chief threats to the species include conversion of pasture to cropland, overgrazing, agricultural expansion, herbicide application, urban expansion, rock quarrying and right-of-way maintenance and rerouting.

Species Status in the Action Area

No historic or extant populations of prairie bush clover are known from LaSalle County (USFWS, 1988). No prairie bush clover specimens from LaSalle County are found in the Illinois Natural History Survey plant collection (http://www.inhs.uiuc.edu/cbd/collections/index.html).

No extensive surveys for this species were conducted as part of this project. However, habitat and community types were mapped along the entire project corridor. No areas with suitable habitat for the prairie bush clover were found within the action area for this project.

Sheepnose Mussel

Species Description

The habitat requirements of the sheepnose mussel (*Plethobasus cyphyus*) were summarized by Butler (2002). The sheepnose is principally a larger-stream species primarily occurring in shallow shoal habitats with moderate to swift currents over coarse sand and gravel; however, streams with mud, cobble, and boulder substrates may also be used. Individuals found in larger rivers may occur in deep runs. In streams, the mussels occur primarily in flow refuges, or relatively stable areas that display little movement of particles during flood events.

The sheepnose, like many mussel species, is particularly sensitive to siltation and sedimentation. Siltation and general sedimentation is a widespread problem that has been implicated in the decline of stream mussel populations (Butler, 2002).

Species Status in the Action Area

The Sheepnose mussel was historically known from 77 streams in 15 states, including the Illinois and Fox rivers in Illinois (Butler, 2002). Currently, extant populations are known from 26 streams in 14 states and do not include the Illinois or Fox Rivers (Butler, 2002). The sheepnose was last reported from the Illinois River in LaSalle County in 1940 and from the Fox River in adjacent Kane County in 1913 (Butler, 2002). No sheepnose mussel specimens from LaSalle County are found in the Illinois Natural History Survey mollusk collection (http://www.inhs.uiuc.edu/cbd/collections/index.html). No surveys for this species were conducted as part of this project.

EFFECTS OF THE PROPOSED ACTION

Direct Effects

Indiana Bat

The proposed transmission line may directly affect the Indiana bat by reducing the amount of potential roosting and foraging habitat and creating fragmented woodlands within the action area. Approximately 29.7 acres of woodland would be impacted by the project. Impacts to individual tracts range from approximately 0.1 acre to 6.8 acres (Attachment 2 - Table 3). A total of 25.6 acres of suitable Indiana bat summer habitat would be impacted by the project, constituting 86 percent of the total woodland impacts. However, 73 percent of the impacted Indiana bat habitat is rated as low quality and no high quality Indiana bat habitat would be impacted. A summary of impacts to potential Indiana bat summer habitat resulting from the proposed transmission line is shown in Attachment 2 - Table 3.

In addition to the impact on individual woodland tracts within the proposed ROW, the impact of the overall project in a larger context was also assessed. The number of acres of woodland within a 1-mile corridor, centered on the proposed transmission line, was calculated and compared to the number of acres of woodland that would be impacted by the project. Woodland present within the 1-mile corridor was determined based on spatial data from the Land Cover of Illinois 1999-2000 GeoTiff (Illinois State Geological Survey).

Approximately 2,231.4 acres of woodland are located within 0.5 mile of the project corridor. The loss of woodland resulting from the proposed transmission line would account for approximately 1 percent of the total woodland within 0.5 mile of the project corridor. Illinois GAP Analysis data show 12,355 acres of potential Indiana bat habitat within LaSalle County and 6.1 acres within the action area (Attachment 1 – Figure 7; IL-GAP, 2006). If we consider the 12,355 acres of potential Indiana bat habitat in LaSalle County (based in IL-GAP data), the proposed transmission line would only impact 0.05 percent of the total potential Indiana bat habitat identified by the Illinois GAP Analysis project within LaSalle County.

A portion of the action area occurs within the 5-mile buffer of Blackball Mine (Attachment 1 - Figure 4). Approximately 10,267 acres of woodland occur within the 5-mile buffer. A total of 14.1 acres of suitable Indiana bat habitat within the 5-mile buffer would be impacted by the proposed transmission line, representing 0.1 percent of the total woodland habitat within the 5-mile buffer.

Bald Eagle

No known bald eagle nests or winter roosting areas were identified in the action area. Some large trees that could potentially be used as perching sites are found at the Fox River crossing; however, this type of habitat is abundant in the area and no impacts to bald eagles or their habitat are anticipated.

If bald eagles are present within the action area during the construction period, it is possible that certain construction activities may disturb individual eagles. Based on the lack of suitable eagle habitat within the action area and the lack of known eagle records in the area, it is unlikely that significant habitat modification or degradation will take place that results in death or injury of a bald eagle by significantly impairing behavioral patterns (i.e. Harm). In addition, any eagles that are present in the action area are likely to be transients and therefore construction activities are unlikely to significantly disrupt normal behavior patterns resulting in injury to an eagle (i.e. Harass).

Decurrent False Aster, Eastern Prairie Fringed Orchid, Prairie Bush Clover

No habitat for the decurrent false aster, Eastern prairie fringed orchid or prairie bush clover is found within the action area; therefore, no impacts to these plant species will occur as a result of the proposed project.

Sheepnose Mussel

The proposed transmission line will completely span the Fox River; therefore, no impacts to the sheepnose mussel will occur as a result of the proposed project.

Indirect Effects

No secondary, additional and/or accelerated commercial or residential development is anticipated to occur within or adjacent to the action area as a result of the proposed transmission line. Therefore, no indirect effects to any species under consideration in this biological assessment caused by or resulting from the project are expected.

Cumulative Effects

Cumulative effects, as they apply to Section 7 analyses, are those effects of future State, tribal, local or private actions that are reasonably certain to occur within the action area (USFWS and NMFS, 1998). Three local or private actions planned or under consideration occur within or adjacent to the action area:

1. City of LaSalle Annexation - The City of LaSalle is currently in the process of evaluating annexing into the city areas along the Little Vermillion River south of I-80, west of I-39, and north of the proposed transmission line with the long-term objective of potential residential development. Much of this area contains potentially high quality Indiana bat summer habitat. If this area were to be developed, potential Indiana bat habitat may be affected.

2. Park Development – Illinois Cement Company is proposing to construct a new city park as part of its reclamation plan on previously mined and reclaimed land adjacent to the Little Vermillion River. The land would then be deeded over to the City of LaSalle. If constructed, the proposed park is not expected to impact Indiana bat habitat, and depending on the final design, may benefit bats in the area.

3. Commercial Development – A commercial development is planned for an area adjacent to the proposed transmission line at approximately Mile 21 – 21.5. No suitable Indiana bat habitat is present in that location; therefore, no impacts to Indiana bat habitat would occur.

CONCLUSIONS AND EFFECTS DETERMINATION

Indiana Bat

We conclude that the proposed North LaSalle – Wedron – Ottawa 138kv Transmission Line is **Not Likely to Adversely Affect Indiana Bats** for the following reasons:

- No summer maternity colonies are known to exist in LaSalle County.
- No impacts to Blackball Mine (designated critical habitat) or known swarming habitat associated with the mine will occur as a result of the proposed project.
- Suitable habitat exists within the action area; however, trees located in areas containing suitable habitat will be removed during the period when Indiana bats are not expected to be using those trees (September 15 – April 15). Therefore, the project will not harm, harass, displace, injure, or kill bats.
- Potential Indiana bat habitat within the action area is rated as low to moderate quality, with 73 percent of the impacted Indiana bat habitat rated as low quality. Efforts to minimize impacts to potential Indiana bat habitat were considered during routing of the transmission line resulting in complete avoidance of areas rated as high quality Indiana bat habitat.
- The overall quantity or quality of habitat should not be diminished on a scale that results in jeopardy to the species, because:
    1. The amount of potential Indiana bat habitat that would be impacted (25.6 acres) by the project represents 1 percent of the total acreage of woodland (2,231.4 acres) located within a 0.5-mile radius of the action area.
    2. Only 0.05 percent of the potential Indiana bat habitat identified by the Illinois GAP Project within LaSalle County would be impacted.
    3. The amount of suitable Indiana bat habitat impacted within the 5-mile buffer of Blackball Mine (14.1 acres) represents only 0.1 percent of the total woodland (10,267 acres) located within the 5-mile buffer.

Bald Eagle

We conclude that the proposed North LaSalle – Wedron – Ottawa 138kv Transmission Line will have **No Effect on the Bald Eagle** for the following reasons:

- No bald eagle nests or congregations of wintering bald eagles are known to occur within or adjacent to the action area.
- Suitable bald eagle habitat is generally absent within and adjacent to the action area.
- Some large trees that could be used as perching sites were identified at the Fox River crossing; however, trees of this type and size are abundant in the area and the clearing required for this project at the Fox River crossing would not significantly diminish the availability of potential perch sites. Therefore, the project will not harm, harass, displace, injure, or kill bald eagles.

Decurrent False Aster

We conclude that the proposed North LaSalle – Wedron – Ottawa 138kv Transmission Line will have **No Effect on the Decurrent False Aster** for the following reasons:

- The decurrent false aster is endemic to the Illinois River floodplain and historically occurred in LaSalle County; however, no extant populations are known from the county.
- The action area for the proposed project does not include the Illinois River floodplain.
- No suitable habitat for the decurrent false aster was found within the action area.

Eastern Prairie Fringed Orchid

We conclude that the proposed North LaSalle – Wedron – Ottawa 138kv Transmission Line will have **No Effect on the Eastern Prairie Fringed Orchid** for the following reasons:

- No extant populations are known from LaSalle County.
- No areas with suitable habitat for the eastern prairie fringed orchid were found within the action area.

Prairie Bush Clover

We conclude that the proposed North LaSalle – Wedron – Ottawa 138kv Transmission Line will have **No Effect on the Prairie Bush Clover** for the following reasons:

- No historic or extant populations of prairie bush clover are known from LaSalle County.
- No areas with suitable habitat for prairie bush clover (i.e. native or remnant prairie) were found within the action area.

Sheepnose Mussel

We conclude that the proposed North LaSalle – Wedron – Ottawa 138kv Transmission Line will have **No Effect on the Sheepnose Mussel** for the following reasons:

- No extant populations of sheepnose mussel are known to occur in the Fox River or other waterways within the action area; the species was last reported from the Fox River in 1913 in Kane County.
- The proposed transmission line will completely span the Fox River. No temporary crossings are planned.

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Ottawa - Wedron Indiana Bat Habitat Map.mxd Map Created By M. Rosenheart

ATTACHMENT 2

TABLES

TABLE 1

SUITABILITY AS INDIANA BAT SUMMER HABITAT OF WOODLAND TRACTS LOCATED WITHIN THE ACTION AREA

Tract No.	Suitable Indiana Bat Summer Habitat Criteria			Suitable Indiana Bat Habitat Present
	Percent Forest Cover > 15% Within 0.5 Mile	Permanent Water Present Within 0.5 Mile	Potential Roost Trees Present	
Ottawa – Wedron[1]				
0.0		✓		
1.0	✓	✓	✓	✓
2.5	✓	✓		
5.0	✓	✓		
6.5	✓	✓	✓	✓
8.0	✓	✓	✓	✓
North LaSalle – Wedron[2]				
9.0	✓	✓	✓	✓
9.5-1	✓	✓	✓	✓
9.5-2	✓	✓	✓	✓
12.5	✓	✓	✓	✓
25.5		✓		
26.5-1	✓	✓	✓	✓
26.5-2	✓	✓		
26.5-3	✓	✓	✓	✓
27.0	✓	✓	✓	✓
Totals	**13 Tracts**	**15 Tracts**	**10 Tracts**	**10 Tracts**

[1] See Figure 5
[2] See Figure 6

TABLE 1

SUITABILITY AS INDIANA BAT SUMMER HABITAT OF WOODLAND TRACTS LOCATED WITHIN THE ACTION AREA

Tract No.	Suitable Indiana Bat Summer Habitat Criteria			Suitable Indiana Bat Habitat Present
	Percent Forest Cover > 15% Within 0.5 Mile	Permanent Water Present Within 0.5 Mile	Potential Roost Trees Present	
Ottawa – Wedron[1]				
0.0		✓		
1.0	✓	✓	✓	✓
2.5	✓	✓		
5.0	✓	✓		
6.5	✓	✓	✓	✓
8.0	✓	✓	✓	✓
North LaSalle – Wedron[2]				
9.0	✓	✓	✓	✓
9.5-1	✓	✓	✓	✓
9.5-2	✓	✓	✓	✓
12.5	✓	✓	✓	✓
25.5		✓		
26.5-1	✓	✓	✓	✓
26.5-2	✓	✓		
26.5-3	✓	✓	✓	✓
27.0	✓	✓	✓	✓
Totals	**13 Tracts**	**15 Tracts**	**10 Tracts**	**10 Tracts**

[1] See Figure 5
[2] See Figure 6

TABLE 2

SUMMARY OF WOODLAND TRACTS LOCATED WITHIN THE ACTION AREA RATED AS SUITABLE INDIANA BAT SUMMER HABITAT

Tract No.	Forest Community Type	Canopy Dominant Species	Sub-canopy Dominant Species	Shrub Dominant Species	Habitat Quality
9.5-2	Mesic upland forest	*Populus deltoides* *Celtis occidentalis* *Ulmus americana*	*Fraxinus pennsylvanica* *Celtis occidentalis*	*Rosa multiflora* *Lonicera maackii* *Rubus stirgosus*	Low
12.5	Wet-mesic forest Dry-mesic upland forest	*Acer negundo* *Quercus macrocarpa* *Carya ovata* *Carya glabra* *Maclura pomifera* *Celtis occidentalis* *Populus deltoides*	*Acer negundo* *Maclura pomifera* *Robina pseudoacacia* *Ulmus americana* *Carya sp.* *Celtis occidentalis*	*Lonicera maackii* *Sambucus canadensis* *Rhamnus carthartica* *Ribes missouriense* *Rhus radicans*	Moderate
26.5-1	Mesic upland forest	*Acer negundo* *Populus deltoides* *Juglans nigra* *Fraxinus pennsylvanica* *Acer saccharinum*	*Morus rubra* *Acer saccharinum*	non present	Low
26.5-3	Mesic floodplain forest Mesic upland forest	*Acer saccharinum* *Platanus occidentalis* *Populus deltoides* *Celtis occidentalis* *Robinia pseudoacacia*	*Acer negundo* *Juglans nigra* *Celtis occidentalis* *Tilia americana* *Prunus serotina*	*Ribes missouriense*	Low
27.0	Mesic upland forest	*Quercus rubra* *Quercus alba* *Carya glabra*	*Ulmus rubra* *Maclura pomifera*	*Lonicera maackii* *Rosa multiflora* *Ribes missouriense*	Low

[1] See Figure 5
[2] See Figure 6

TABLE 2

SUMMARY OF WOODLAND TRACTS LOCATED WITHIN THE ACTION AREA RATED AS SUITABLE INDIANA BAT SUMMER HABITAT

Tract No.	Forest Community Type	Canopy Dominant Species	Sub-canopy Dominant Species	Shrub Dominant Species	Habitat Quality
9.5-2	Mesic upland forest	*Populus deltoides* *Celtis occidentalis* *Ulmus americana*	*Fraxinus pennsylvanica* *Celtis occidentalis*	*Rosa multiflora* *Lonicera maackii* *Rubus stirgosus*	Low
12.5	Wet-mesic forest Dry-mesic upland forest	*Acer negundo* *Quercus macrocarpa* *Carya ovata* *Carya glabra* *Maclura pomifera* *Celtis occidentalis* *Populus deltoides*	*Acer negundo* *Maclura pomifera* *Robina pseudoacacia* *Ulmus americana* *Carya sp.* *Celtis occidentalis*	*Lonicera maackii* *Sambucus canadensis* *Rhamnus carthartica* *Ribes missouriense* *Rhus radicans*	Moderate
26.5-1	Mesic upland forest	*Acer negundo* *Populus deltoides* *Juglans nigra* *Fraxinus pennsylvanica* *Acer saccharinum*	*Morus rubra* *Acer saccharinum*	non present	Low
26.5-3	Mesic floodplain forest Mesic upland forest	*Acer saccharinum* *Platanus occidentalis* *Populus deltoides* *Celtis occidentalis* *Robinia pseudoacacia*	*Acer negundo* *Juglans nigra* *Celtis occidentalis* *Tilia americana* *Prunus serotina*	*Ribes missouriense*	Low
27.0	Mesic upland forest	*Quercus rubra* *Quercus alba* *Carya glabra*	*Ulmus rubra* *Maclura pomifera*	*Lonicera maackii* *Rosa multiflora* *Ribes missouriense*	Low

[1] See Figure 5
[2] See Figure 6